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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/698,201	10/30/2000	Tae-kyung Kim	1293.1144/MDS	6730

21171 7590 09/15/2004

STAAS & HALSEY LLP
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1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

CHU, KIM KWOK

ART UNIT	PAPER NUMBER
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2653

DATE MAILED: 09/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/698,201	KIM ET AL.	
	Examiner	Art Unit	
	Kim-Kwok CHU	2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed on 7/29/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-82 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-48, 50-59, 61-73 and 75-82 is/are allowed.
- 6) ☒ Claim(s) 49, 60 and 74 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Remarks

1. Applicant's Remarks filed on July 29, 2004 have been fully considered but they are not persuasive.

(a) Applicant states that the prior art of Kashiwagi's disk 31 is fastened to the disk 32" (page 17 of the Remarks, line 21). Accordingly, although disks 31 and 32 are not separated, they are considered as a first medium and a second medium respectively as recited in Applicant's claim 49;

(b) Applicant states that the prior art of Kobayashi does not suggest the general collimator having a diverging power (page 17 of the Remarks, last 4 lines). Accordingly, Kobayashi's collimating lens in Fig. 25 consists of a negative lens having a concave surface which has a diverging power similar to lens 4b in Applicant's Fig. 12; and

(c) Applicant states that Kobayashi does not teach that the lens shown in Fig. 25 should be used in or would be usable with light having a wavelength of 400 nm (page 18 of the Remarks, lines 9-11). Accordingly, the divergence of a lens such as Kobayashi's does not depend on the wavelength of the light.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwagi (U.S. Patent 6,069,868) in view of Kobayashi (U.S. Patent 5,724,335).

Kashiwagi teaches an optical pickup very similar to that of the instant invention. For example, Kashiwagi teaches the following:

(a) as in claim 49, a light source 21 to generate a first light beam 23 with a wavelength of roughly 400 nm for use with recording and/or reproducing with respect to a first medium 31 (Figs. 1 and 4; column 7, lines 17-21);

(b) as in claim 49, a second light beam with a wavelength of roughly 650 nm for use with recording and/or reproducing with respect to a second medium 32 other than the first medium (Figs. 1 and 4; column 7, lines 48-52);

(c) as in claim 49, an optical element 23 to focus a generated one of the first and second light beams onto a received one of the first and second media (Figs. 1 and 3);

(d) as in claim 49, a detector 24 to detect the generated light beam reflected from the received one medium (Figs. 1 and 3); and

(e) as in claim 49, the optical pickup focuses the first and second light beams onto the corresponding first and second media with negligible aberration (Figs. 1 and 3).

However, Kashiwagi does not teach the following:

(a) as in claim 49, a collimating lens arranged in an optical path between the light source and the optical element;

(b) as in claim 49, the collimating lens having a diverging lens with a diverging power; and

(c) as in claim 49, the diverging power of the diverging lens is sufficient to allow the optical element to focus the first light beam onto the first medium with negligible aberration.

Kobayashi teaches an optical pickup with two different wavelengths having the following features:

(a) a collimating lens arranged in an optical path between the light source 21 and an optical element 23 (Fig. 25, column 1, lines 43-47);

(b) the collimating lens having a diverging lens with a

diverging power (Fig. 25, column 1, lines 43-47);
and

(c) the diverging power of the diverging lens is sufficient to allow the optical element to focus the first light beam onto the first medium with negligible aberration (Fig. 25; column 1, lines 43-47).

To eliminate stray light beams, it would have been obvious to one of ordinary skill in the art to use a collimating lens such as Kobayashi's in Kashiwagi's optical pickup, because the collimating lens regulates Kashiwagi's light beam into a parallel light beam.

Furthermore, to reduce the aberration effect when a light beam is focused on a medium's surface with deviated thicknesses such as Kashiwagi's two layer medium, it would have been obvious to one of ordinary skill in the art to use the collimating lens with a diverging lens such as Kobayashi's in Kashiwagi's optical pickup, because the diverging lens varies the angle of the light beam being focused by the objective lens so that the correct focus point on the medium's layer is obtained.

4. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwagi (U.S. Patent 6,069,868) in view of Kobayashi (U.S. Patent 5,724,335).

Kashiwagi teaches an optical pickup very similar to that of the instant invention. For example, Kashiwagi teaches the following:

(a) as in claim 60, a light source 21 to generate a light beam 23 with a wavelength is less than roughly 500 nm (Figs. 1 and 4; column 7, lines 17-21; wavelength is 410nm which is roughly less than 500 nm);

(b) as in claim 60, another light beam with a wavelength more than roughly 500 nm (Figs. 1 and 4; column 7, lines 48-52; 650 nm roughly more than 500 nm);

(c) as in claim 60, an optical element 23 to focus the beams onto respective media (Figs. 1 and 3);

(d) as in claim 60, a detector 24 to detect a respective light beam reflected from the corresponding media (Figs. 1 and 3); and

(e) as in claim 60, the optical system focuses the light beams onto respective media with negligible aberration (Figs. 1 and 3).

However, Kashiwagi does not teach the following:

(a) as in claim 60, a collimating lens arranged in an optical path between the light source 21 and the optical element

23; and

(b) as in claim 60, the collimating lens has a surface of diverging power.

Kobayashi teaches a collimating lens having a surface of diverging power (Fig. 25; column 1, lines 43-47).

To eliminate stray light beams, it would have been obvious to one of ordinary skill in the art to use a collimating lens such as Kobayashi's in Kashiwagi's optical pickup, because the collimating lens regulates Kashiwagi's light beam into a parallel light beam.

Furthermore, to reduce the aberration effect when a light beam is focused on a medium's surface with deviated thicknesses such as Kashiwagi's two layer medium, it would have been obvious to one of ordinary skill in the art to use the collimating lens with a diverging lens such as Kobayashi's in Kashiwagi's optical pickup, because the diverging lens varies the angle of the light beam being focused by the objective lens so that the correct focus point on the medium's layer is obtained.

5. Claim 74 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kashiwagi (U.S. Patent 6,069,868) in view of Kobayashi (U.S. Patent 5,724,335) and Kashiwagi (U.S. Patent 6,175,548).

Kashiwagi teaches an optical pickup very similar to that of the instant invention. For example, Kashiwagi teaches the following:

(a) as in claim 74, a light source 21 to generate a light beam 23 with a wavelengths of blue laser range (Figs. 1 and 4; column 7, lines 17-21);

(b) as in claim 74, another light beam with a wavelength suitable for recording and/or reproducing data with respect to a digital versatile disc (Figs. 1 and 4; column 7, lines 48-52; 650 nm is used in a DVD disc);

(c) as in claim 74, an optical element 23 to focus the beams onto respective media (Figs. 1 and 3);

(d) as in claim 74, a detector 24 to detect a respective light beam reflected from the media (Figs. 1 and 3); and

(e) as in claim 74, the optical system focuses the light beams onto respective media with negligible aberration (Figs. 1 and 3).

However, Kashiwagi does not teach the following:

(a) as in claim 74, a collimating lens arranged in an optical path between the light source 21 and the optical element

23;

(b) as in claim 74, the collimating lens has a surface of diverging power; and

(c) as in claim 74, the light sources to emit a light beam less than 400 nm.

Kobayashi teaches a collimating lens having a surface of diverging power (Fig. 25; column 1, lines 43-47).

Kashiwagi teaches a blue laser having a range of 380 nm to 450 nm (column 3, lines 26-28).

To eliminate stray light beams, it would have been obvious to one of ordinary skill in the art to use a collimating lens such as Kobayashi's in Kashiwagi's optical pickup, because the collimating lens regulates Kashiwagi's light beam into a parallel light beam.

Furthermore, to reduce the aberration effect when a light beam is focused on a medium's surface with deviated thicknesses such as Kashiwagi's two layer medium, it would have been obvious to one of ordinary skill in the art to use the collimating lens with a diverging lens such as Kobayashi's in Kashiwagi's optical pickup, because the diverging lens varies the angle of the light beam being focused by the objective lens so that the correct focus point on the medium's layer is obtained.

With respect to the range of the blue laser light, although Kashiwagi's '868 patent does not give a range, in his '548

patent, Kashiwagi discloses the range of a blue laser can be less than 400 nm as claimed by Applicant's. Hence, for using a blue laser light source to read/write high density optical recording medium, it would have been obvious to one of ordinary skill in the art to choose the blue laser at less than 400 nm as Applicant's claim, because it is within the range of the wavelength a blue laser light source can generate.

Allowable Subject Matter

6. Claims 1-48, 50-59, 61-73 and 75-82 are allowable over prior art.

7. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claims 1, 9, 15, 20, 25, 50, 61, 71 and 75, the prior art fail to teach or fairly suggest an optical pickup having a collimating lens including a diverging lens with diverging power and a focusing lens with focusing power. The collimating lens satisfies the relationship $-1.5 > f/f_n$, where f is a total focal length of the collimating lens, and f_n is a focal length of the diverging lens.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

8. *THIS ACTION IS MADE FINAL.* Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire *THREE MONTHS* from the mailing date of this action.

In the event a first reply is filed within *TWO MONTHS* of the mailing date of this final action and the advisory action is not mailed until after the end of the *THREE-MONTH* shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than *SIX MONTHS* from the mailing date of this final action

9. Any response to this action should be mailed to:

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20231

or faxed to:

(703) 872-9306, (for formal communications intended for
entry)

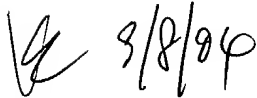
Or:

(703) 746-6909, (for informal or draft communications,
please label "PROPOSED" or "DRAFT")

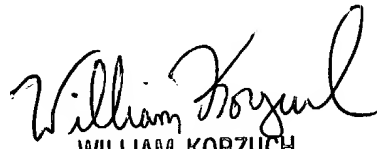
Hand-delivered responses should be brought to Crystal Park
II, 2021 Crystal Drive, Arlington. VA., Sixth Floor
(Receptionist).

Any inquiry of a general nature or relating to the status of
this application should be directed to the Group receptionist
whose telephone number is (703) 305-3900.

Any inquiry concerning this communication or earlier
communications from the examiner should be directed to Kim CHU
whose telephone number is (703) 305-3032.


Kim-kwok CHU
Examiner AU2653
September 8, 2004

(703) 305-3032


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SUPERVISORY PATENT EXAMINER
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